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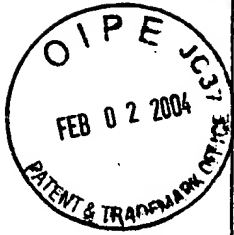
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AF 1714

PATENT  
CUSTOMER NUMBER, 34,986  
Docket No. 01064.0011-05000

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of: )  
)  
Richard LEVY ) Group Art Unit: 1714  
)  
Serial No.: 09/359,809 ) Examiner: M. Medley  
)  
Filed: July 21, 1999 )  
)  
For: LUBRICANT COMPOSITIONS AND )  
METHODS )

Commissioner for Patents  
P. O. Box 1450  
Alexandria, Virginia 22313-1450

Sir:

**APPELLANT'S BRIEF ON APPEAL PURSUANT TO 37 C.F.R. § 1.192**

Appellant submits the following brief in triplicate to perfect the appeal filed on December 6, 2003. The brief sets forth the authorities and arguments on which appellant will rely to maintain the appeal.

Appellant calls to the Board's attention that he filed a first brief on appeal in this application on August 12, 2002, however, the examiner did not consider that brief since it referred to copending applications on appeal that the Board of Patent Appeals and Interferences subsequently remanded to the examiner, or in which the examiner reopened prosecution by way of an office action rather than responding with an Examiner's Answer. Appellant therefore submitted a second brief on appeal on January 22, 2003 and the examiner, again issued an office action in lieu of an examiner's answer. Appellant responded to the January 22 office action on September 4, 2003 to

address the new issues raised by the examiner, who then issued a final rejection on December 3, 2003. Appellant responded to the final rejection with the December 6, 2003 Notice of Appeal.

Appellant previously paid the fee required by 37 C.F.R. § 1.17(c), at the time of filing the August 12, 2002 brief. The Manual of Patent Examining Procedure (M.P.E.P.) §1208.02 provides that in these circumstances the appellant does not have to pay an additional fee for filing this brief.

(1) Real Party in Interest

The inventor assigned the parent application Serial No. 08/487,436, filed June 7, 1995 to Lee County Mosquito Control District. The assignment was recorded at reel 7878, frame 0620 on August 23, 1995, which makes Lee County Mosquito Control District the real party in interest.

(2) Related Appeals and Interferences

Appellant has the following co-pending appeals before the Board of Patent Appeals and Interferences in related applications:

Serial No. 09/779,588	Filed February 9, 2001
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Serial No. 08/943,125	Filed October 3, 1997
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The Patent and Trademark Office (PTO) has labeled the cover of their file for application Serial No. 08/943,125 as follows:

U. S. PATENT AND TRADEMARK OFFICE  
RETURN TO (PTO 1056)  
INTERFERENCE SERVICE BRANCH  
This case is involved in an  
Interference Proceeding

Appellant's August 12, 2002 brief attached as Exhibit 1, a photocopy of a certified copy of the PTO cover of application Serial No. 08/943,125. Appellant also attaches a copy to this brief. The Patent and Trademark Office has not notified appellant that they have declared an interference in any of the foregoing applications, even though they indicated on the file of application Serial No. 08/943,125 "[t] his case is involved in an Interference Proceeding." The Board also took the position, when contacted by appellant's attorneys by telephone, that the Patent Office had not declared an interference in application Serial No. 08/943,125. Lastly, the Board's decision in the pending appeal could directly affect, or be directly affected by, or having a bearing on the decision in the co-pending appeals.

Appellant calls the Board's attention to the United States Patent Application of Martin C. Flautt et al., Serial No. 09/190,866 filed November 13, 1998. Appellant advised the examiner that appellant's Application Serial No. 09/779,588 copies claims from the corresponding Flautt et. PCT Application WO 00/29486. The Patent and Trademark Office, as of the filing of this brief, has not declared an interference between appellant's Application Serial No. 09/779,588. and Flautt et. al., Serial No. 09/190,866.

Appellant also calls the Board's attention to the United States Patent Application of Serge Rebouillat et. al., Serial No. 09/443,695 filed November 19, 1999. Appellant advised the examiner that appellant's Application Serial No. 09/779,559 filed February 9, 2001 copies claims from the corresponding Rebouillat et. al. PCT Application WO 00/31752. The Patent and Trademark Office, as of the filing of this brief, has not declared an interference between appellant's Application Serial No. 09/779,559 and Rebouillat et. al., Serial No. 09/443,695, but has indicated allowability of some of the

claims of Application Serial No. 09/779,559, and has suspended prosecution of the application to consider the declaration of an interference.

(3) Status Of Claims

Appellant submitted a preliminary amendment on July 23, 1999 at the time of filing the present application which added claims 57-71 and cancelled claims 2-56 without prejudice or disclaimer. Appellant's September 5, 2001 response amended claims 1, 57, 59, 62-66, 69, and 71. On September 4, 2003, appellant further amended claims 1, 57, and 59, and added claim 72 which the examiner entered and considered in her December 3, 2003 office action. Claims 1 and 57-72 comprise the claims in the Application as of the filing of the Notice of Appeal in this Application.

(4) Status Of Amendments

The examiner has entered all amendments to the claims.

(5) Summary Of Invention

The invention comprises a process of making a lubricant and a lubricant composition of matter consisting essentially of a product produced by a process (written description, page 21, lines 6-8.) of combining a superabsorbent polymer that absorbs greater than about 100 times its weight in water with a material for decreasing friction between moving surfaces where the material is a petroleum oil lubricant, or grease thereof, a solid inorganic compound, a solid organic compound, water containing a lubricant additive, a phosphate, a fatty oil, fatty acid or wax, a synthetic oil lubricant, or grease thereof, or a soap, and mixtures thereof. The lubricant additives include without limitation, an oxidation inhibitor, a rust inhibitor, anti-wear agent, detergent-dispersant,

pour-point depressant, viscosity-index improver or foam inhibitor. (Written Description, paragraph bridging pages 19 and 20, and page 20, first full paragraph.)

(6) Issues

The issues on appeal are:

- a. Whether Hopkins, Jr., United States Patent No. 5,362,766 et al. ("Hopkins") combined with The Merck Index and the admitted prior art anticipates claim 1 under 35 U.S.C. §102(b);
- b. Whether the admitted prior art, Levy, United States Patent No. 4,985,251 anticipates claims 1, 57, 63, 69, and 70 under 35 U.S.C. §102(b);
- c. Whether Geursen et al., WO 93/182,263, and its counterpart United States Patent No. 5,534,304 ("Geursen") support the examiner's rejection of claims 1, 57-58, 63-64, and 69-70 under 35 U.S.C. § 102(b);
- d. Whether the examiner can sustain the provisional rejection of claims 57-72 under the judicially created doctrine of obviousness-type double patenting in view of claims 29-43 of copending application Serial No. 09/357,957.

(7) Grouping Of Claims

Claims 1 and 57-72 do not stand or fall together. Appellant will demonstrate the separate patentability of the claims in the subsequent Argument.

(8)(a) Argument

**The Written Description Does Not Confine The Composition Of Claim 72 To The  
Method Of Manufacture Set Out In The Application On Pages 31-32**

The examiner has not rejected claim 72, but has stated on page 2 of the December 3, 2003 office action that she will read the claim parameter "substantially anhydrous" in light of the definition set forth on pages 31-32 of the instant application. Although pages 31-32 describe one embodiment of the invention, the application at pages 28-29 also describes steps for manufacturing appellants' lubricant, such as mixing the lubricant into the superabsorbent polymer prior to or after exposing it to water or high humidity. Any substantially anhydrous composition obtained by these and other methods are also included in claim 72, i. e., appellant's disclosure sets out the substantially anhydrous composition beyond the description given at pages 31-32.

Appellant points out in this respect, that the written description at pages 33-36 also illustrates five methods for combining the superabsorbent polymer with a lubricant, without confining the invention to the method the examiner refers to. The last three paragraphs on page 31 of appellant's written description regarding one of several methods of making the composition (see, for example, pp. 35-36) does not constitute the only method. Page 35 of the written description in this regard describes admixtures of superabsorbent polymers and lubricants or lubricant formulations which comprise agglomerated water-free compositions. The written description goes on to describe the procedure for forming these admixtures as mixing one or more superabsorbent polymers with one or more solid and/or liquid lubricants with or without additional lubricating additives, and agglomerating the homogeneous or heterogeneous admixture compositions at various humidities, pressures, temperatures and the like by standard techniques to form solid unified pellets.

Page 36 further describes the process of admixing agglomerated or non-agglomerated superabsorbent polymer-base lubricant compositions with cross-linking agents to impart different binding, release, coating, swelling or other structural or matrix characteristics to the solid lubricant compositions. At a minimum, appellant has described methods of combining the superabsorbent polymer with a lubricant in a non-aqueous environment, particularly by the procedure described on page 36 of admixing non-agglomerated superabsorbent polymer-based lubricant compositions with cross-linking agents to impart different binding, release, coating and other properties to solid lubricant compositions.

In summary, the examiner has not taken into account the broad language at pages 28-29 and 33-36 in the disclosure describing other methods of making the composition which omits, or makes no reference to the features on pages 31-32 that she refers to in her December 3 Office Action.

**The Rejection Under 35 U.S.C. § 102(b)**

a. **Claim 1 Is Not Anticipated by Hopkins, combined with the Merck Index and the Admitted Prior Art**

The examiner rejects claim 1 under 35 U.S.C. §102(b) as anticipated by Hopkins combined with The Merck Index and the admitted prior art. Hopkins describes a method for combining a superabsorbent polymer with a "matrix" material such as cellulose acetate, methacrylate polymers, polyvinyl acetate, copolymers and combinations of these polymers. (Hopkins, col. 1, lines 29-35; col. 2, lines 10-19). The



"matrix" material further includes "plasticizers" (col.2, line 23) which, the skilled artisan knows increases the flexibility of the matrix material, i.e., cellulose acetate, methacrylate polymers, polyvinyl acetate, copolymers and combinations of these polymers.

Webster's Ninth New Collegiate Dictionary defines "matrix" as a "material in which something is enclosed or embedded (as for protection or study)." Hopkins obviously uses the matrix to envelop particles of the superabsorbent polymer in describing the invention as "providing a matrix material in a suitable solvent; mixing particles of a superabsorbent polymer into said solutioned [sic] matrix material to form a suspension; homogenizing the suspension; and removing the solid from the suspension." (Col. 1, lines 30-35) (emphasis added). The foregoing description clearly conveys that Hopkins only dissolves the matrix in a solvent and not the superabsorbent polymer, but rather mixes particles of the superabsorbent polymer into the solution of the matrix in the solvent to form a "suspension."

In fact, Hopkins defines the term "suspension" as a "mixture containing a substantially uniform distribution of solute and particulate matter through the liquid carrier." (Col. 2, lines 30-33). There can be no doubt that Hopkins by referring to the "particles of a superabsorbent polymer" in this section, further confirms the end product comprises a matrix of materials such as cellulose esters that envelop particles of superabsorbent polymer.

The subsequent disclosure relative to the plasticizers clearly teaches that these plasticizers combine with the matrix material and not with the superabsorbent polymer. Hopkins in this regard states that the "matrix material may further comprise additives [such as] plasticizers . . . ." (Col. 2, lines 19-23).

Thus the addition of plasticizers such as glycerin to the Hopkins composition addresses the need to plasticize the matrix material and in no way would teach a person with ordinary skill in the art that the plasticizers combine with the super absorbent polymer.

The examples describe adding a solution of cellulose acetate in acetone in combination with a superabsorbent polymer (Sanwet<sup>®</sup> IM-1000) and glycerin (a plasticizer) to a high shear mixing apparatus to form a solution, which when subsequently cast into films and air dried retains a 0.9% saline solution. Although Hopkins combines a superabsorbent polymer with acetone in the examples, the skilled artisan knows that acetone will not dissolve superabsorbent polymers such as Sanwet<sup>®</sup> IM-1000, and that in essence the combination of acetone and superabsorbent polymer comprises a slurry of particles of the superabsorbent polymer in the acetone in order to facilitate introducing it into the solution of cellulose acetate. Furthermore, Hopkins had no awareness of any lubricating properties of the combination of cellulose acetate or other matrix materials with a superabsorbent polymer.

Hopkins fails to teach a utility for the combination of superabsorbent polymer and matrix material. The reference describes the matrix material as having good absorbent and retention properties and further immobilizes the superabsorbent polymer. (Col. 1, lines 18-19). Hopkins further indicates the matrix materials "can be made porous as would be desirable for filtration membranes." (Col. 1, line 66, Col. 2, lines 7-9).

The reference constitutes nonanalogous art in that it fails to teach anything about the formation of a lubricant or the use of the disclosed material for the purpose of lubrication. Appellant does not rely on the "consisting essentially of" terminology in the claims to distinguish Hopkins.

The Merck Index confirms that the prior art describes glycerin as a lubricant as well as a plasticizer, but Hopkins only uses it to plasticize the matrix, and doesn't combine glycerin with the superabsorbent polymer, only the matrix. The admitted prior art describes various known superabsorbent polymers, but nothing in the combination of references teaches or suggests making the combination of superabsorbent polymers with a lubricant.

**b. Claims 1, 57, 63, 69, and 70 are not**  
**Anticipated by Levy**

The examiner rejects claims 1, 57, 63, 69 and 70 under 35 U.S.C. §102(b) as anticipated by the Admitted Prior Art, i.e., Levy.

Claim 1 describes a process for manufacturing a lubricant composition by combining a superabsorbent polymer with a material for decreasing friction between moving surfaces wherein said superabsorbent polymer absorbs more than about 100 times its weight in water. The material for decreasing friction is a petroleum oil lubricant or grease, a solid inorganic compound, a solid organic compound, water containing a lubricant additive, a phosphate, a fatty oil, fatty acid or wax, a synthetic oil lubricant, or grease thereof, or a soap, and mixtures thereof.

Claim 57 describes the lubricant as a petroleum oil or grease optionally with a lubricant additive, claim 63 describes it as water containing a lubricant additive, claim 69 as a fatty oil, fatty acid or wax, and claim 70 as a synthetic oil or grease, all in combination with a superabsorbent polymer that absorbs greater than about 100 times its weight in water. Levy fails to teach these lubricants.

Again, the non-water lubricants optionally contain a lubricant additive, whereas the water lubricant contains a lubricant additive. The lubricant additives include an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor. Levy fails to teach these additives.

Levy does not teach appellant's invention of claims 1, 57, 63, 69, or 70. Importantly, Levy relates to a method and composition for insect and weed control with biological control agents, and not lubrication. Again, Levy does not disclose a petroleum oil lubricant or grease, a solid inorganic lubricant compound, a solid organic lubricant compound, water containing a lubricant additive, a phosphate, a fatty oil, fatty acid or wax, a synthetic oil lubricant, or grease thereof, or a soap, and mixtures thereof as in claim 1, or the lubricants selected from claim 1 as set out in claims above for claims 57, 63 66 and 70. Without teaching these compounds or compositions for insect or weed control, the examiner cannot argue that the reference teaches combining them with a superabsorbent polymer, let alone using the combination in a process for manufacturing a lubricant, or teaching a lubricating product produced by the process of the claims.

**c. Claims 1, 57- 58, 63- 64, and 69-70 are not**  
**Anticipated by Geursen**

The examiner rejects claims 1, 57-58, 63-64, and 69-70 under 35 U.S.C. §102(b) as anticipated by Geursen et al. WO93/18223 ("Geursen") and its counterpart United States Patent No. 5,534,304.

Geursen discloses a process for treating a substrate such as a fiber or fibrous product with a superabsorbent material and addresses the dual problem, on the one hand of developing a flowable aqueous emulsion having a sufficient amount of superabsorbent polymer to form a coating that acts as a water barrier, and on the other, of providing a formulation that did not gel because of the superabsorbent polymer.

Geursen specifically notes:

The drawback to impregnating a substrate with a superabsorbent material dispersed in an aqueous system is that, due to the superabsorbent's high viscosity-enhancing action, steady feeding of it is extremely difficult if not impossible. Further, on account of the restricted superabsorbent concentration in the impregnating liquid only a small quantity of superabsorbent material can be applied to the yarn per treatment. Another drawback to this method is that the comparatively large amount of impregnating liquid which is applied to the substrate with the superabsorbent material has to be removed by evaporation.

Geursen WO 93/ par. bridging pp. 4-5; U.S. column 2, lines 57-67.<sup>1</sup>

The superabsorbent polymer employed by Geursen does not dissolve in water, so Geursen formed an emulsion of the polymer in water by polymerizing the water soluble monomer in a water-in-oil emulsion to form the polymer in the aqueous phase. (WO 93/ p. 7, lines 16-19; U.S. Col. 4, lines 1-16)<sup>2</sup>. Geursen uses the emulsion as a coating, and subsequently heat-treats it to drive off the water phase and oil phase, generally a relatively low boiling paraffin hydrocarbon. (WO 93/ p. 5, lines 19-28; U. S.

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1. Willemsen et al. U. S. Pat. No. 6,319,558 ("Willemsen"), assigned to Akzo Nobel, as is Geursen, acknowledges the same problem. Willemsen USPTO Patent Full Text and Image Data Base, p.4, par. 1.

2. Guersen forms a coating "via an emulsion of the superabsorbent in a water-in-oil-emulsion, the superabsorbent material being present in the aqueous phase of the emulsion." WO 93/ p.7, lines 1-5; U.S. col. 3, lines 64-67 (emphasis added).

Col. 3, lines 15-23). Geursen also discloses commercially available water-in-oil emulsions prepared in the same way, which may also include additives, such as lubricants and emulsifying agents. (WO 93/ p. 7, lines 20-27, p. 8 lines 10-14; U. S. Col. 4, lines 17-26; 42-47).

The disclosed aqueous polymerization of the monomer into a superabsorbent polymer resulted in a polymer that absorbs about 45 or 20 times its weight in water. An examination of the Geursen examples will show that the reference contains experimental data showing only the production of these low water absorbing superabsorbent polymers, and the desirability of using them and not superabsorbent polymers that absorb greater than about 100 times their weight in water. Geursen therefore teaches away from the use of superabsorbent polymers that absorb greater than about 100 times their weight in water, and also lacks an enabling disclosure of how to produce oil in water emulsions of superabsorbent polymers that absorb greater than about 100 times their weight in water.

The reference describes yarns coated with a superabsorbent polymer composition which have a "swelling value" (WO 93/ p. 13 line 15 to p.14 line 5; U. S. Col. 7, lines 19-44) defined by a formula (WO 93/ p.13, lines 9-14; U. S. Col. 7, lines 45-51). The swelling value consists of a number that indicates the relative water absorbency of the yarn or the yarn coated with the superabsorbent polymer composition.

The following analysis of the data in Geursen bears out the reference does not teach or suggest superabsorbent polymers that can absorb greater than about 100 times their weight in water for the process or product disclosed.

Table A, reports the swelling values of a polyester yarn coated with a superabsorbent water-in-oil emulsion. Prior to coating, the yarn had a swelling value of

9 (WO 93/ p. 17, line25; U. S. Col. 9, lines 34-35). The formula in WO 93/ p.13, lines 9-14; U. S. Col. 7, lines 45-51 gives the swelling value of the superabsorbent polymer:

$$\text{swelling value} = \frac{(a - b) \times 100}{b}$$

Arbitrarily setting the weight of the yarn (the value for "a") at 100 grams will give the dry weight of the yarn (the value for "b") as follows:

Example 1                      Swelling value of uncoated yarn = 9 (Col. 9, lines 34-35)

$$\frac{100-b}{b} = 0.09$$

$$100 = 1.096b$$

$$b = 91.74 \text{ (dry weight of yarn)}$$

$$\text{Yarn water absorption} = 100 - 91.74 = 8.26$$

Example 1                      Swelling value of coated yarn = 114 (Col. 9, line 28)

$$\frac{100-b}{b} = 1.14$$

$$100 = 2.146b$$

$$b = 46.72 \text{ (dry wt. of yarn and superabsorbent polymer)}$$

$$\text{Coated yarn water absorption} = 100 - 46.72 = 53.28$$

$$53.28 - 8.26 = 45.02 \text{ water absorbed by superabsorbent polymer}$$

$$46.27 \times 2.1\% \text{ polymer (Col 9, line 28)} = 0.97 \text{ superabsorbent polymer on yarn}$$

$$\frac{45.02}{0.97} = 46.3 \text{ Superabsorbent polymer absorbs 46.3 times its weight in water.}$$

This shows that 0.97 grams of superabsorbent polymer picked up or absorbed 45.02 grams of water or 46.3 times its weight in water, less than one-half of that of appellant's claimed superabsorbent polymer which absorbs greater than about 100 times its weight in water.

The reference also shows Example 3 uses the same yarn employed in Example 1 but with the application of 7.0 weight percent of the same superabsorbent polymer employed in Example 1. Also the swelling value of the sample increased from 114 in Example 1 to 171 in Example 3. Using the method above (pp. 6-7 of this brief), shows that the superabsorbent polymer of Example 3 had a water absorbency of about 20 (actually, 21.2, which sets the superabsorbent polymer concentration at about 80 weight %) as compared to the water absorbency of Example 1 of 45 ( i.e., a superabsorbent polymer concentration of 55 weight %).

The same calculations will show the superabsorbent polymer of experiment 4 (Table B) coated on a nylon-6,6 yarn absorbs about the same amount of water, i.e., less than about one half appellant's claimed superabsorbent polymer that absorbs greater than about 100 times its weight in water.

These data from Geursen clearly show the inventors did not know how to combine a lubricant with a superabsorbent polymer that absorbs greater than about 100 times its weight in water, or the desirability of doing this. Since the reference does not disclose this type of polymer coating or how to produce it, Geursen does not contain an enabling disclosure. Appellant, on the other hand, has disclosed methods on how to combine superabsorbent polymers that absorb greater than about 100 times their weight in water with lubricants and use the combination as a lubricant.



Geursen attempted to address the problem of coating a superabsorbent polymers on yarn in light of the primary difficulty the industry had with them, namely that when combined with water they caused extremely high viscosities at a relatively low concentration. The superabsorbent polymer formulation sought by Geursen, not only had to have some flowable characteristics in order to apply it as a coating material, but also had to have a relatively high solids content. Cf. Geursen, WO 93/ par. bridging pp. 4-5, U.S. column 2, lines 57-67.

Geursen addressed this problem by polymerizing the superabsorbent monomer to form an emulsion with the superabsorbent polymer in the water phase. Analyzing the nature of water-in-oil emulsions will illustrate further how Geursen achieved the goal of not only providing a superabsorbent polymer formulation having relatively high superabsorbent polymer solids, but also a flowable composition that could be coated onto a substrate with relative ease.

This water phase consists of very small droplets of superabsorbent polymer in combination with water (the discontinuous phase) suspended in the oil phase (the continuous phase). One can easily visualize that the viscosity of the droplets made up of water and a superabsorbent polymer would have little, if any, effect on the oil or continuous phase if the particles were sufficiently mobile in the continuous phase, e. g., by employing a sufficient volume of the continuous phase. By utilizing an emulsion, Geursen addressed the major problem caused by the high viscosity superabsorbent polymers, namely their tendency to impart high viscosity to the formulation. Geursen thereby obtained a formulation that flowed readily and fulfilled the need to employ superabsorbent polymers as an easily applied coating.

Geursen, however, had to address another problem, namely the superabsorbent polymer solids content in the dispersed phase or the droplets. If he employed a superabsorbent polymer that absorbed 1,000 times its weight in water the droplets would contain 1,000 parts by weight of water for every one part of superabsorbent polymer (0.1% superabsorbent polymer) and he would not resolve the problem of applying a sufficient amount of superabsorbent polymer onto a substrate so it could act as a water barrier. Similarly if he used a superabsorbent polymer that absorbed greater than about 100 times its weight in water, each droplet would contain about 100 parts by weight of water for one part of superabsorbent polymer (1% by weight of superabsorbent polymer). In both instances, the superabsorbent polymers would not provide a high solids coating.

Geursen appears to address this solids problem by using a superabsorbent polymer that absorbs only about 45 times its weight in water, and using the analysis above, each droplet of the emulsion would contain about 55 parts by weight of superabsorbent polymer and 45 parts by weight of water, a 55-fold increase in solids over a superabsorbent polymer that absorbs about 100 times its weight in water. Geursen employing a superabsorbent polymer that absorbed about 20 times its weight in water gave him a solids content of 80 parts of the polymer, amounting to an 80-fold increase over a superabsorbent polymer that absorbs about 100 times its weight in water.

Using superabsorbent polymers that only absorb about 45 or 20 times their weight in water allowed Geursen to achieve the dual objective of not only laying down relatively large amounts of superabsorbent polymer as a coating, but also avoiding the problem of removing large quantities of water from the substrate.

Geursen also appears to avoid this problem of high water absorbing superabsorbent polymers by using a sodium sulphonate electrolyte in the emulsion polymerization process. For example, Geursen, WO 93/ par. bridging pp.16-17; U. S. column 9, lines 8 et. seq. discloses using a sodium sulphonate ("sulpho") salt of the superabsorbent monomer.<sup>3</sup>

Levy (of record), however, discusses this well known technique of reducing both the viscosity and water absorbency of a superabsorbent polymer, observing:

normally, unmixed formulations of superabsorbent polymers and water have a tendency to form gels of such a high viscosity that they are not flowable. An additional technique used to render a viscous superabsorbent polymer composition . . . flowable, is the additional [sic, addition] of varying concentrations of one or more salt(s)/electrolyte(s) such as sodium chloride. . . . These salt(s)/electrolyte(s) have a tendency to interfere with the hydrogen bonding or reduce the hydrophilic bonding of the water to the gel. Also, superabsorbent polymers . . . absorb less water when electrolytes are present.

Levy, U.S. Patent No. 4,985,251 column 15, lines 12-26 (emphasis added).

Takeda et al. United States Patent No. 4,618,631 teaches the same phenomenon in table I at column 7, lines 41-55, Table II, column 8, lines 60-65, and Table III, column 10, lines 1-10. These data show that the addition of an electrolyte to a superabsorbent polymer reduces the water absorbency of the polymer by a factor of about ten. For example, the addition of an electrolyte to a superabsorbent polymer with a water absorbency of about 500 times its weight in water will reduce the absorbency of the polymer to about fifty times its weight in water. Garner et al. Journal of Chemical Education, January 1997, Vol. 74 No. 1, p. 95 describes this as well.

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<sup>3</sup> Geursen might also have employed sodium chloride as an electrolyte to achieve this result, which this brief discusses later.

This raises the question as to whether or not Geursen added sodium chloride or a similar salt to the superabsorbent polymer emulsion to reduce the water absorbency of the polymer. A further examination of the data reported in Table A of Geursen suggests this. The superabsorbent polymer of Example 1 of Geursen absorbed about 45 times its weight in water, whereas the superabsorbent polymer of Example 3 absorbed about 20 times its weight in water. Bearing in mind that Geursen employed the same superabsorbent polymer in both examples, the skilled artisan would know that something was done in the experiments to obtain that difference in water absorbency, but not reported. Appellant believes that Geursen added a salt such as sodium chloride to the emulsion of Example 3 to change the water absorbency of the superabsorbent polymer.

Another factor that influences the absorbency of these superabsorbent polymers is the degree of polymer cross-linking, but Geursen doesn't discuss this, even though known in the prior art, e.g., Garner et al. supra. Geursen by employing the same superabsorbent polymer in both examples 1 and 3 does not appear to have changed the cross-linking of the superabsorbent polymer. Geursen also discloses the addition of other components to the polymerization reaction, without indicating anything about the effect they may have on water absorbency of the polymer obtained. Geursen, WO 93/ par. bridging pp. 7-8, p. 8, lines 20-30; U.S. column 4, lines 28-33, lines 51-58.

Although Geursen might appear to disclose using superabsorbent polymers having water absorbencies greater than 100, (WO 93/ par. bridging pp.12-13; U.S. column 7, lines 1-6) he does not. A closer reading of the reference shows this disclosure relates to a "product" further described as a combination of the substrate with the superabsorbent polymer, and not the superabsorbent polymer alone. WO93/ lines

23-24; U.S. column 6, lines 57-60. As illustrated above, Geursen's substrates absorb water and have an affect on the overall water absorbtion of the combination. The water absorbtion of the "product" takes into account the combined effect of the substrate absorbing water and the polymer absorbing water. Geursen therefore does not teach the use of a superabsorbent polymer having a water absorbency greater than about 100, but rather the water absorbency of the "product" which is the substrate combined with the superabsorbent polymer.

Because Geursen teaches superabsorbent polymer coatings that absorb only about 45 or 20 times their weight in water, the reference clearly raises the question of how the skilled artisan gets over the hurdle of this water absorbency of 45 or 20 to arrive at appellant's lower limit of water absorbency greater than about 100, and why she or he would be led by the reference to do this? The reference clearly lacks an enabling disclosure of how to do it. The examiner therefore has not met the burden of providing evidence that Geursen does in fact show a superabsorbent polymer in an aqueous medium suitable for coating a substrate, where the superabsorbent polymer absorbs greater than about 100 times its weight in water. Lacking this evidence, the rejection cannot stand.

The Geursen Reference does not Anticipate Since It Does Not Contain an  
Enabling Disclosure of How to Make Appellant's Invention

In a recent decision, The Court of Appeals for the Federal Circuit re-emphasized "anticipation requires that the assertedly anticipating disclosure enabled the subject matter of the reference and thus the . . . [claimed] invention without undue experimentation." Elan Pharmaceuticals, et al. v. Mayo Foundation for Medical

Education and Research, 00-467, slip op. at 3 (Fed. Cir., October 2, 2003). The court amplified its position by citing its prior rulings on the issue, pointing out:

[T]o serve as an anticipating reference, the reference must enable that which it is asserted to anticipate. "A claimed invention cannot be anticipated by a prior art reference if the allegedly anticipatory disclosures cited as prior art are not enabled. . . . To anticipate the reference must also enable one of skill in the art to make and use the claimed invention. . . . To anticipate a claim, a reference must disclose every element of the challenged claim and enable one skilled in the art to make the anticipating subject matter."

Elan Pharmaceuticals, et al. 00-467, slip op. at 6 (citations omitted).

Geursen does not contain an enabling disclosure as pointed out above. He had to confront the problem of formulating a flowable superabsorbent composition that also had a reasonably high solids content in order to avoid the application of multiple coats on a fiber to obtain acceptable film thickness, i. e., he had to lay down a sufficient amount of superabsorbent polymer on the fiber to act as a water barrier, and any composition that required applying multiple coats because of a low solids content, reduced the efficiency and increased the costs of applying it.

He faced a see-saw dilemma: if he pushed up the water absorbency of the superabsorbent polymer, he would push down the quantity of polymer in the emulsion (i. e., the solids content), and if he pushed up the quantity of polymer, he would have to push down the water absorbency of the polymer. The Geursen examples indicate he struck some kind of balance between water absorbency and solids content by using superabsorbent polymers in the emulsion that only absorbed about 45 or about 20 times their weight in water.

Importantly, Geursen does not teach how to make compositions comprising appellant's lubricants in combination with water in oil emulsions of superabsorbent polymers that absorbed more than 100 times their weight in water. He utilizes a superabsorbent polymer water in oil emulsion obtained from an outside supplier, Stockhausen GmbH "MIROX W 45985," but doesn't provide instructions on how to manufacture it, and as demonstrated above, the polymer in this emulsion only absorbs about 45 or 20 times its weight in water. The examiner has pointed to nothing in the Geursen reference that enables the skilled artisan to make this emulsion.

The Elan Pharmaceuticals court set out criteria for enablement stating it:

requires that "the prior art reference must teach one of ordinary skill in the art to make or carry out the claimed invention without undue experimentation. . . .Whether undue experimentation would have been required to make and use than invention, and thus whether a disclosure is enabling under 35 U.S.C. §112, par.1 is a question of law." The disclosure in an assertedly anticipating reference must be adequate to enable possession of the desired subject matter. It is insufficient to name the desired subject matter, if it cannot be produced without undue experimentation

Elan Pharmaceuticals, et al. 00-467, slip op. at 7-8. (Citations omitted)(emphasis added.)

Lacking any instruction whatsoever on how to produce the Stockhausen GmbH "MIROX " water in oil emulsions, let alone how to obtain one with a superabsorbent polymer in the water phase that absorbs greater than 100 times its weight in water, Geursen lacks the requisite enabling disclosure to consider it as an anticipatory reference, especially since the examiner has not alluded to anything that shows the

skilled artisan would know how to make such a emulsion. The reference does not contain any teaching on how to balance Geursen's required flowability of the emulsion with the additional requirements of polymer water absorbency and high solids content. Juggling these three variables involves more than routine experimentation. Appellant submits that if in fact a skilled artisan could do this based on the information provided by the reference, and obtain a water in oil emulsion of a superabsorbent polymer that absorbed more than 100 times its weight in water with acceptable flowability and solids content, it would amount to requiring her or him to engage in undue experimentation.

The Geursen Reference does not Anticipate Claims 1, 57-58,63-64 and 69-70

Since It Does Not Disclose Every Element of the Challenged Claims

In order to anticipate, Geursen has to "disclose every element of the challenged claims." Elan Pharmaceuticals, et al. 00-467, slip op. at 6. Accordingly, Geursen does not anticipate claim 1 or 57 which relate to a superabsorbent polymer in combination with a "petroleum oil lubricant or grease thereof, a solid inorganic compound, a solid organic compound, water containing a lubricant additive, a phosphate, a fatty oil, fatty acid or wax, a synthetic oil lubricant, or grease thereof, or a soap."

The examiner has not pointed out where Geursen teaches a " petroleum oil lubricant or grease thereof, a solid inorganic compound, a solid organic compound, water containing a lubricant additive, a phosphate, a fatty oil, fatty acid or wax, a synthetic oil lubricant, or grease thereof, or a soap" set out in claim1 and 57.

Similarly, Geursen does not anticipate claims 58 which relates to a superabsorbent polymer in combination with a "petroleum oil lubricant or grease thereof." The examiner has not pointed out where Geursen teaches a "petroleum oil lubricant or grease thereof." Geursen also does not anticipate claim 63 which relates to



a superabsorbent polymer in combination with "water and a lubricant additive." The examiner has not pointed out where Geursen teaches "water and a lubricant additive."

Geursen does not anticipate claim 64 which relates to a superabsorbent polymer in combination with "oil or greases thereof and water." The examiner has not pointed out where Geursen teaches "oil or greases thereof and water." Furthermore, Geursen does not anticipate claim 69 which relates to a superabsorbent polymer in combination with a "fatty oil, fatty acid or wax." The examiner has not pointed out where Geursen teaches a "fatty oil, fatty acid or wax." Lastly, Geursen does not anticipate claim 70 which relates to a superabsorbent polymer in combination with a "synthetic oil lubricant or grease thereof." The examiner has not pointed out where Geursen teaches a "synthetic oil lubricant or grease thereof."

All of the foregoing claims further characterize the superabsorbent polymer as absorbing greater than about 100 times its weight in water. As pointed out above, Geursen does not teach a superabsorbent polymer that absorbs greater than 100 times its weight in water in the Geursen emulsion, and lacks an enabling disclosure of how to produce an emulsion of a superabsorbent polymer that has this property.

### **The Claims Do Not Stand or Fall Together**

Claims 1 and 57 comprises generic claims to a process for forming a lubricating composition, and a lubricating composition of matter which is a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, and generically sets out various lubricant materials. The balance of the claims directly or indirectly depend on claim 57, however define the superabsorbent polymer as based on acrylic acid, an acrylic ester, acrylonitrile,

acrylamide, copolymers thereof or mixtures thereof. In the unlikely event that the examiner would be able to shown any acrylic resin for this particular application, appellant has the option of rebutting the rejection with data showing why the specific polymers as well as the particular lubricants contained in the claims have new, different, or unexpected properties.

The examiner has withdrawn the rejection of claims 59-62, 65-68 and 71-72 and has objected to them as "depending on claims that are rejected under 103 (a) [sic]" (December 3, 2003 Office Action, p. 2)<sup>4</sup>, further evidencing that the claims do not stand or fall together.

Claim 60 dependent on claim 59 relates to solid lubricants subgenerically set out in claim 61 and appellant also would have the opportunity to show new, unexpected and unobvious results employing these lubricant materials .

The claims also stand in the relationship of subgeneric claims to species claims centered around the particular lubricant. Appellant in each instance has the right to submit evidence to show the species claims have properties that would not be foreshadowed by all of the species that fall into the subgeneric claims from which they depend. If required and shown, this would further support appellant's position that the claims do not stand or fall together.

### **The Provisional Double Patenting Rejection**

The examiner provisionally rejects claims 57-71 under the judicially created doctrine of obviousness-type double patenting in view of copending application Serial No. 09/357,957 filed July 23, 1999. Appellant points out that the present examiner has

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4 . The examiner withdrew "[t]he previous rejections under 35 U.S.C. 103. . . ." and appellant will assume that the examiner intended to cite 35 U.S.C. § 102 (b), the only statutory rejection remaining in the application. (Cf. December 3, 2003 Office Action, p. 2)

also issued a provisional double patenting rejection in copending application Serial No. 09/357,957, which has not issued as a patent. Appellant should not be required to file a terminal disclaimer in the present application since the Patent Office may not allow the copending application which forms the basis of the double patenting rejection. When a provisional double patenting rejection is the sole remaining rejection in an application otherwise in condition for allowance, the M.P.E.P. states that the examiner should withdraw the rejection in the application and permit it to issue as a patent. M.P.E.P. § 804(I.)(B) p. 800 -15 July 1998.

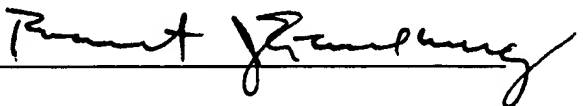
### **Conclusions**

Appellant requests the Board to reverse the examiner in all respects and remand the application to the examiner for the issuance of a Notice of Allowance. If the Board overrules the prior art rejections in this application and sustains the provisional double patenting rejection, appellant similarly requests the Board to remand the application to the examiner for issuance of a Notice of Allowance pursuant to M.P.E.P. § 804(I.)(B) p. 800 -15 July 1998.

Respectfully submitted,

THE LAW OFFICES OF ROBERT J. EICHELBURG

Dated: January 30, 2004

By:   
Robert J. Eichelburg, Reg. No 23,057

**CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8**

I hereby certify that this correspondence is being deposited with the United States Postal Service under 37 C.F.R. § 1.8 on the date indicated below and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313 -1450

By:   
Robert J. Eichelburg, Reg. No 23,057

Dated: January 30, 2004

(9) Appendix

Claims on Appeal

1. A process for manufacturing a lubricant composition consisting essentially of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces wherein said superabsorbent polymer absorbs more than about 100 times its weight in water, and said material for decreasing friction is a petroleum oil lubricant or grease thereof, a solid inorganic compound, a solid organic compound, water containing a lubricant additive, a phosphate, a fatty oil, fatty acid or wax, a synthetic oil lubricant, or grease thereof, or a soap, or mixtures thereof.

2 - 56. (cancelled without prejudice or disclaimer)

57. A lubricant composition of matter consisting essentially of a product produced by the process of combining a superabsorbent polymer that absorbs more than about 100 times its weight in water with a material for decreasing friction between moving surfaces, wherein said material for decreasing friction is a petroleum oil lubricant or grease thereof, a solid inorganic compound, a solid organic compound, water containing a lubricant additive, a phosphate, a fatty oil, fatty acid or wax, a synthetic oil lubricant, or grease thereof, or a soap, or mixtures thereof.

58. The lubricant composition of claim 57 consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a petroleum oil lubricant or grease thereof, and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

59. The lubricant composition of claim 57 consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a solid lubricant, wherein said solid lubricant is an inorganic compound, carbon or metal that provides barrier-layer lubrication, or mixtures thereof, and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

60. The lubricant composition of claim 59, wherein said solid lubricant is graphite, molybdenum disulfide, cobalt chloride, antimony oxide, niobium selenide, tungsten disulfide, mica, boron nitride, silver sulfate, cadmium chloride, cadmium iodide, borax, basic white lead, lead carbonate, lead iodide, asbestos, talc, zinc oxide, carbon, babbitt, bronze, brass, aluminum, gallium, indium, thallium, thorium, copper, silver, gold, mercury, lead, tin, indium, or the Group VIII noble metals or mixtures thereof.

61. The lubricant composition of claim 57 consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a solid organic lubricant, and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

62. The lubricant composition of claim 61, wherein said solid organic lubricant is a fluoroalkylene homopolymer or copolymer, a lower alkylene polyolefin homopolymer or co-polymer, a paraffinic hydrocarbon wax, phenanthrene, copper phthalocyanine, or mixtures thereof.

63. The lubricant composition of claim 57 consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is water containing a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

64. The lubricant composition of claim 57, consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is an oil or greases thereof and water, optionally containing a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.



65. The lubricant composition of claim 57, consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a solid lubricant and water, optionally containing a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

66. The lubricant composition of claim 65, wherein said solid lubricant is graphite, molybdenum disulfide, cobalt chloride, antimony oxide, niobium selenide, tungsten disulfide, mica, boron nitride, silver sulfate, cadmium chloride, cadmium iodide, borax, basic white lead, lead carbonate, lead iodide, asbestos, talc, zinc oxide, carbon, babbitt, bronze, brass, aluminum, gallium, indium, thallium, thorium, copper, silver, gold, mercury, lead, tin, indium, the Group VIII noble metals, a fluoroalkylene homopolymer or copolymer, a lower alkylene polyolefin homopolymer or co-polymer, a paraffinic hydrocarbon wax, phenanthrene, copper phthalocyanine, or mixtures thereof.

67. The lubricant composition of claim 57 consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a phosphate, and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

68. The lubricant composition of claim 67, wherein said material for decreasing friction is zinc phosphate, iron phosphate or manganese phosphate, or mixtures thereof.

69. The lubricant composition of claim 57 consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a fatty oil, fatty acid, or wax, or mixtures thereof and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

70. The lubricant composition of claim 57 consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a synthetic oil lubricant, or grease thereof, and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

71. The lubricant composition of claim 57 consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a soap, and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

72. The composition of any one of claims 58-62, 67-71 where said composition is substantially anhydrous.

PM 284278

# THE UNITED STATES OF AMERICA

**TO ALL TO WHOM THESE PRESENTS SHALL COME:**

**UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office**

**August 21, 2000**

**THIS IS TO CERTIFY THAT ANNEXED IS A TRUE COPY FROM THE  
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**SERIAL NUMBER: 08/943,125**

**FILING DATE: October 03, 1997**



**By Authority of the  
COMMISSIONER OF PATENTS AND TRADEMARKS**

*L. Edelen*

**L. EDELEN  
Certifying Officer**

**REYNOLDS COOK**

6000-10105

UTILITY SERIAL NUMBER	PATENT DATE	PATENT NUMBER
SERIAL NUMBER 08/943,125	FILING DATE 10/03/97	CLASS 252 508
SUBCLASS 609 110		GROUP ART UNIT 1111 1721
EXAMINER med/24		

RICHARD LEVY, MYERS, FL.

**\*\*CONTINUING DATA\*\*\*\*\***  
 VERIFIED THIS APPLN IS A CON OF 08/487,436 06/07/95  
*MBM*

**\*\*FOREIGN/PCT APPLICATIONS\*\*\*\*\***  
 VERIFIED  
*MBM*



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\*\*\*\*\* SMALL ENTITY \*\*\*\*\*

Foreign priority claimed 35 USC 119 conditions met	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	AS FILED	STATE OR COUNTRY	SHEETS DRWGS.	TOTAL CLAIMS	INDER CLAIMS	FILING FEE RECEIVED	ATTORNEY'S DOCKET NO.
Verified and Acknowledged	<i>MBM</i>	→	FL	0	11	1	\$395.00	1064.0011-02

FINNEGAN HENDERSON FARABOW GARRETT  
 AND DUNN  
 1300 I STREET NW  
 WASHINGTON DC 20005-3315

LUBRICANT COMPOSITIONS AND METHODS

U.S. DEPT. OF COMM./PAT. & TM. - PTO-436L (Rev.12-84)

PARTS OF APPLICATION FILED SEPARATELY		Applications Examiner	
NOTICE OF ALLOWANCE MAILED		CLAIMS ALLOWED	
Amount Due		Final Claim	Print Claim
Date Paid	Assistant Examiner	DRAWING	
Label Area	Primary Examiner	Sheet Drawn	For Drawn
PREPARED FOR ISSUE		ISSUE BATCH NUMBER	
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Class	Sub.	Date	Exmr.

SEARCH NOTES		
	Date	Exmr.
Reviewed ABN Parent S.N. 08/487436 for ant. search release and pending 08/943,123	4/1/98	MBN
Appeal Conference with SPE M. Ball	7/1/99	MBN

(RIGHT OUTSIDE)



PATENT  
CUSTOMER NUMBER, 34,986  
Docket No. 01064.0011-05000

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of: )  
)  
Richard LEVY ) Group Art Unit: 1714  
)  
Serial No.: 09/359,809 ) Examiner: M. Medley  
)  
Filed: July 21, 1999 )  
)  
For: LUBRICANT COMPOSITIONS AND )  
METHODS )

Commissioner for Patents  
P. O. Box 1450  
Alexandria, Virginia 22313-1450

Sir:

**APPELLANT'S BRIEF ON APPEAL PURSUANT TO 37 C.F.R. § 1.192**

Appellant submits the following brief in triplicate to perfect the appeal filed on December 6, 2003. The brief sets forth the authorities and arguments on which appellant will rely to maintain the appeal.

Appellant calls to the Board's attention that he filed a first brief on appeal in this application on August 12, 2002, however, the examiner did not consider that brief since it referred to copending applications on appeal that the Board of Patent Appeals and Interferences subsequently remanded to the examiner, or in which the examiner reopened prosecution by way of an office action rather than responding with an Examiner's Answer. Appellant therefore submitted a second brief on appeal on January 22, 2003 and the examiner, again issued an office action in lieu of an examiner's answer. Appellant responded to the January 22 office action on September 4, 2003 to



address the new issues raised by the examiner, who then issued a final rejection on December 3, 2003. Appellant responded to the final rejection with the December 6, 2003 Notice of Appeal.

Appellant previously paid the fee required by 37 C.F.R. § 1.17(c), at the time of filing the August 12, 2002 brief. The Manual of Patent Examining Procedure (M.P.E.P.) §1208.02 provides that in these circumstances the appellant does not have to pay an additional fee for filing this brief.

(1) Real Party in Interest

The inventor assigned the parent application Serial No. 08/487,436, filed June 7, 1995 to Lee County Mosquito Control District. The assignment was recorded at reel 7878, frame 0620 on August 23, 1995, which makes Lee County Mosquito Control District the real party in interest.

(2) Related Appeals and Interferences

Appellant has the following co-pending appeals before the Board of Patent Appeals and Interferences in related applications:

Serial No. 09/779,588

Filed February 9, 2001

Serial No. 08/943,125

Filed October 3, 1997

The Patent and Trademark Office (PTO) has labeled the cover of their file for application Serial No. 08/943,125 as follows:

U. S. PATENT AND TRADEMARK OFFICE  
RETURN TO (PTO 1056)  
INTERFERENCE SERVICE BRANCH  
This case is involved in an  
Interference Proceeding

Appellant's August 12, 2002 brief attached as Exhibit 1, a photocopy of a certified copy of the PTO cover of application Serial No. 08/943,125. Appellant also attaches a copy to this brief. The Patent and Trademark Office has not notified appellant that they have declared an interference in any of the foregoing applications, even though they indicated on the file of application Serial No. 08/943,125 "[t] his case is involved in an Interference Proceeding." The Board also took the position, when contacted by appellant's attorneys by telephone, that the Patent Office had not declared an interference in application Serial No. 08/943,125. Lastly, the Board's decision in the pending appeal could directly affect, or be directly affected by, or having a bearing on the decision in the co-pending appeals.

Appellant calls the Board's attention to the United States Patent Application of Martin C. Flautt et al., Serial No. 09/190,866 filed November 13, 1998. Appellant advised the examiner that appellant's Application Serial No. 09/779,588 copies claims from the corresponding Flautt et. PCT Application WO 00/29486. The Patent and Trademark Office, as of the filing of this brief, has not declared an interference between appellant's Application Serial No. 09/779,588. and Flautt et. al., Serial No. 09/190,866.

Appellant also calls the Board's attention to the United States Patent Application of Serge Rebouillat et. al., Serial No. 09/443,695 filed November 19, 1999. Appellant advised the examiner that appellant's Application Serial No. 09/779,559 filed February 9, 2001 copies claims from the corresponding Rebouillat et. al. PCT Application WO 00/31752. The Patent and Trademark Office, as of the filing of this brief, has not declared an interference between appellant's Application Serial No. 09/779,559 and Rebouillat et. al., Serial No. 09/443,695, but has indicated allowability of some of the

claims of Application Serial No. 09/779,559, and has suspended prosecution of the application to consider the declaration of an interference.

(3) Status Of Claims

Appellant submitted a preliminary amendment on July 23, 1999 at the time of filing the present application which added claims 57-71 and cancelled claims 2-56 without prejudice or disclaimer. Appellant's September 5, 2001 response amended claims 1, 57, 59, 62-66, 69, and 71. On September 4, 2003, appellant further amended claims 1, 57, and 59, and added claim 72 which the examiner entered and considered in her December 3, 2003 office action. Claims 1 and 57-72 comprise the claims in the Application as of the filing of the Notice of Appeal in this Application.

(4) Status Of Amendments

The examiner has entered all amendments to the claims.

(5) Summary Of Invention

The invention comprises a process of making a lubricant and a lubricant composition of matter consisting essentially of a product produced by a process (written description, page 21, lines 6-8.) of combining a superabsorbent polymer that absorbs greater than about 100 times its weight in water with a material for decreasing friction between moving surfaces where the material is a petroleum oil lubricant, or grease thereof, a solid inorganic compound, a solid organic compound, water containing a lubricant additive, a phosphate, a fatty oil, fatty acid or wax, a synthetic oil lubricant, or grease thereof, or a soap, and mixtures thereof. The lubricant additives include without limitation, an oxidation inhibitor, a rust inhibitor, anti-wear agent, detergent-dispersant,

pour-point depressant, viscosity-index improver or foam inhibitor. (Written Description, paragraph bridging pages 19 and 20, and page 20, first full paragraph.)

(6) Issues

The issues on appeal are:

- a. Whether Hopkins, Jr., United States Patent No. 5,362,766 et al. ("Hopkins") combined with The Merck Index and the admitted prior art anticipates claim 1 under 35 U.S.C. §102(b);
- b. Whether the admitted prior art, Levy, United States Patent No. 4,985,251 anticipates claims 1, 57, 63, 69, and 70 under 35 U.S.C. §102(b);
- c. Whether Geursen et al., WO 93/182,263, and its counterpart United States Patent No. 5,534,304 ("Geursen") support the examiner's rejection of claims 1, 57-58, 63-64, and 69-70 under 35 U.S.C. § 102(b);
- d. Whether the examiner can sustain the provisional rejection of claims 57-72 under the judicially created doctrine of obviousness-type double patenting in view of claims 29-43 of copending application Serial No. 09/357,957.

(7) Grouping Of Claims

Claims 1 and 57-72 do not stand or fall together. Appellant will demonstrate the separate patentability of the claims in the subsequent Argument.

(8)(a) Argument

**The Written Description Does Not Confine The Composition Of Claim 72 To The Method Of Manufacture Set Out In The Application On Pages 31-32**

The examiner has not rejected claim 72, but has stated on page 2 of the December 3, 2003 office action that she will read the claim parameter "substantially anhydrous" in light of the definition set forth on pages 31-32 of the instant application. Although pages 31-32 describe one embodiment of the invention, the application at pages 28-29 also describes steps for manufacturing appellants' lubricant, such as mixing the lubricant into the superabsorbent polymer prior to or after exposing it to water or high humidity. Any substantially anhydrous composition obtained by these and other methods are also included in claim 72, i. e., appellant's disclosure sets out the substantially anhydrous composition beyond the description given at pages 31-32.

Appellant points out in this respect, that the written description at pages 33-36 also illustrates five methods for combining the superabsorbent polymer with a lubricant, without confining the invention to the method the examiner refers to. The last three paragraphs on page 31 of appellant's written description regarding one of several methods of making the composition (see, for example, pp. 35-36) does not constitute the only method. Page 35 of the written description in this regard describes admixtures of superabsorbent polymers and lubricants or lubricant formulations which comprise agglomerated water-free compositions. The written description goes on to describe the procedure for forming these admixtures as mixing one or more superabsorbent polymers with one or more solid and/or liquid lubricants with or without additional lubricating additives, and agglomerating the homogeneous or heterogeneous admixture compositions at various humidities, pressures, temperatures and the like by standard techniques to form solid unified pellets.

Page 36 further describes the process of admixing agglomerated or non-agglomerated superabsorbent polymer-base lubricant compositions with cross-linking agents to impart different binding, release, coating, swelling or other structural or matrix characteristics to the solid lubricant compositions. At a minimum, appellant has described methods of combining the superabsorbent polymer with a lubricant in a non-aqueous environment, particularly by the procedure described on page 36 of admixing non-agglomerated superabsorbent polymer-based lubricant compositions with cross-linking agents to impart different binding, release, coating and other properties to solid lubricant compositions.

In summary, the examiner has not taken into account the broad language at pages 28-29 and 33-36 in the disclosure describing other methods of making the composition which omits, or makes no reference to the features on pages 31-32 that she refers to in her December 3 Office Action.

**The Rejection Under 35 U.S.C. § 102(b)**

a. **Claim 1 Is Not Anticipated by Hopkins, combined with th  
Merck Index and the Admitted Prior Art**

The examiner rejects claim 1 under 35 U.S.C. §102(b) as anticipated by Hopkins combined with The Merck Index and the admitted prior art. Hopkins describes a method for combining a superabsorbent polymer with a "matrix" material such as cellulose acetate, methacrylate polymers, polyvinyl acetate, copolymers and combinations of these polymers. (Hopkins, col. 1, lines 29-35; col. 2, lines 10-19). The

"matrix" material further includes "plasticizers" (col.2, line 23) which, the skilled artisan knows increases the flexibility of the matrix material, i.e., cellulose acetate, methacrylate polymers, polyvinyl acetate, copolymers and combinations of these polymers.

Webster's Ninth New Collegiate Dictionary defines "matrix" as a "material in which something is enclosed or embedded (as for protection or study)." Hopkins obviously uses the matrix to envelop particles of the superabsorbent polymer in describing the invention as "providing a matrix material in a suitable solvent; mixing particles of a superabsorbent polymer into said solutioned [sic] matrix material to form a suspension; homogenizing the suspension; and removing the solid from the suspension." (Col. 1, lines 30-35) (emphasis added). The foregoing description clearly conveys that Hopkins only dissolves the matrix in a solvent and not the superabsorbent polymer, but rather mixes particles of the superabsorbent polymer into the solution of the matrix in the solvent to form a "suspension."

In fact, Hopkins defines the term "suspension" as a "mixture containing a substantially uniform distribution of solute and particulate matter through the liquid carrier." (Col. 2, lines 30-33). There can be no doubt that Hopkins by referring to the "particles of a superabsorbent polymer" in this section, further confirms the end product comprises a matrix of materials such as cellulose esters that envelop particles of superabsorbent polymer.

The subsequent disclosure relative to the plasticizers clearly teaches that these plasticizers combine with the matrix material and not with the superabsorbent polymer. Hopkins in this regard states that the "matrix material may further comprise additives [such as] plasticizers . . . ." (Col. 2, lines 19-23).

Thus the addition of plasticizers such as glycerin to the Hopkins composition addresses the need to plasticize the matrix material and in no way would teach a person with ordinary skill in the art that the plasticizers combine with the super absorbent polymer.

The examples describe adding a solution of cellulose acetate in acetone in combination with a superabsorbent polymer (Sanwet<sup>®</sup> IM-1000) and glycerin (a plasticizer) to a high shear mixing apparatus to form a solution, which when subsequently cast into films and air dried retains a 0.9% saline solution. Although Hopkins combines a superabsorbent polymer with acetone in the examples, the skilled artisan knows that acetone will not dissolve superabsorbent polymers such as Sanwet<sup>®</sup> IM-1000, and that in essence the combination of acetone and superabsorbent polymer comprises a slurry of particles of the superabsorbent polymer in the acetone in order to facilitate introducing it into the solution of cellulose acetate. Furthermore, Hopkins had no awareness of any lubricating properties of the combination of cellulose acetate or other matrix materials with a superabsorbent polymer.

Hopkins fails to teach a utility for the combination of superabsorbent polymer and matrix material. The reference describes the matrix material as having good absorbent and retention properties and further immobilizes the superabsorbent polymer. (Col. 1, lines 18-19). Hopkins further indicates the matrix materials "can be made porous as would be desirable for filtration membranes." (Col. 1, line 66, Col. 2, lines 7-9).

The reference constitutes nonanalogous art in that it fails to teach anything about the formation of a lubricant or the use of the disclosed material for the purpose of lubrication. Appellant does not rely on the "consisting essentially of" terminology in the claims to distinguish Hopkins.



The Merck Index confirms that the prior art describes glycerin as a lubricant as well as a plasticizer, but Hopkins only uses it to plasticize the matrix, and doesn't combine glycerin with the superabsorbent polymer, only the matrix. The admitted prior art describes various known superabsorbent polymers, but nothing in the combination of references teaches or suggests making the combination of superabsorbent polymers with a lubricant.

**b. Claims 1, 57, 63, 69, and 70 are not**  
**Anticipated by Levy**

The examiner rejects claims 1, 57, 63, 69 and 70 under 35 U.S.C. §102(b) as anticipated by the Admitted Prior Art, i.e., Levy.

Claim 1 describes a process for manufacturing a lubricant composition by combining a superabsorbent polymer with a material for decreasing friction between moving surfaces wherein said superabsorbent polymer absorbs more than about 100 times its weight in water. The material for decreasing friction is a petroleum oil lubricant or grease, a solid inorganic compound, a solid organic compound, water containing a lubricant additive, a phosphate, a fatty oil, fatty acid or wax, a synthetic oil lubricant, or grease thereof, or a soap, and mixtures thereof.

Claim 57 describes the lubricant as a petroleum oil or grease optionally with a lubricant additive, claim 63 describes it as water containing a lubricant additive, claim 69 as a fatty oil, fatty acid or wax, and claim 70 as a synthetic oil or grease, all in combination with a superabsorbent polymer that absorbs greater than about 100 times its weight in water. Levy fails to teach these lubricants.

Again, the non-water lubricants optionally contain a lubricant additive, whereas the water lubricant contains a lubricant additive. The lubricant additives include an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor. Levy fails to teach these additives.

Levy does not teach appellant's invention of claims 1, 57, 63, 69, or 70. Importantly, Levy relates to a method and composition for insect and weed control with biological control agents, and not lubrication. Again, Levy does not disclose a petroleum oil lubricant or grease, a solid inorganic lubricant compound, a solid organic lubricant compound, water containing a lubricant additive, a phosphate, a fatty oil, fatty acid or wax, a synthetic oil lubricant, or grease thereof, or a soap, and mixtures thereof as in claim 1, or the lubricants selected from claim 1 as set out in claims above for claims 57, 63 66 and 70. Without teaching these compounds or compositions for insect or weed control, the examiner cannot argue that the reference teaches combining them with a superabsorbent polymer, let alone using the combination in a process for manufacturing a lubricant, or teaching a lubricating product produced by the process of the claims.

**c. Claims 1, 57- 58, 63- 64, and 69-70 are not**  
**Anticipated by Geursen**

The examiner rejects claims 1, 57-58, 63-64, and 69-70 under 35 U.S.C. §102(b) as anticipated by Geursen et al. WO93/18223 ("Geursen") and its counterpart United States Patent No. 5,534,304.

Geursen discloses a process for treating a substrate such as a fiber or fibrous product with a superabsorbent material and addresses the dual problem, on the one hand of developing a flowable aqueous emulsion having a sufficient amount of superabsorbent polymer to form a coating that acts as a water barrier, and on the other, of providing a formulation that did not gel because of the superabsorbent polymer.

Geursen specifically notes:

The drawback to impregnating a substrate with a superabsorbent material dispersed in an aqueous system is that, due to the superabsorbent's high viscosity-enhancing action, steady feeding of it is extremely difficult if not impossible. Further, on account of the restricted superabsorbent concentration in the impregnating liquid only a small quantity of superabsorbent material can be applied to the yarn per treatment. Another drawback to this method is that the comparatively large amount of impregnating liquid which is applied to the substrate with the superabsorbent material has to be removed by evaporation.

Geursen WO 93/ par. bridging pp. 4-5; U.S. column 2, lines 57-67.<sup>1</sup>

The superabsorbent polymer employed by Geursen does not dissolve in water, so Geursen formed an emulsion of the polymer in water by polymerizing the water soluble monomer in a water-in-oil emulsion to form the polymer in the aqueous phase. (WO 93/ p. 7, lines 16-19; U.S. Col. 4, lines 1-16)<sup>2</sup>. Geursen uses the emulsion as a coating, and subsequently heat-treats it to drive off the water phase and oil phase, generally a relatively low boiling paraffin hydrocarbon. (WO 93/ p. 5, lines 19-28; U. S.

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1. Willemsen et al. U. S. Pat. No. 6,319,558 ("Willemsen"), assigned to Akzo Nobel, as is Geursen, acknowledges the same problem. Willemsen USPTO Patent Full Text and Image Data Base, p.4, par. 1.

2. Guersen forms a coating "via an emulsion of the superabsorbent in a water-in-oil-emulsion, the superabsorbent material being present in the aqueous phase of the emulsion." WO 93/ p.7, lines 1-5; U.S. col. 3, lines 64-67 (emphasis added).

Col. 3, lines 15-23). Geursen also discloses commercially available water-in-oil emulsions prepared in the same way, which may also include additives, such as lubricants and emulsifying agents. (WO 93/ p. 7, lines 20-27, p. 8 lines 10-14; U. S. Col. 4, lines 17-26; 42-47).

The disclosed aqueous polymerization of the monomer into a superabsorbent polymer resulted in a polymer that absorbs about 45 or 20 times its weight in water. An examination of the Geursen examples will show that the reference contains experimental data showing only the production of these low water absorbing superabsorbent polymers, and the desirability of using them and not superabsorbent polymers that absorb greater than about 100 times their weight in water. Geursen therefore teaches away from the use of superabsorbent polymers that absorb greater than about 100 times their weight in water, and also lacks an enabling disclosure of how to produce oil in water emulsions of superabsorbent polymers that absorb greater than about 100 times their weight in water.

The reference describes yarns coated with a superabsorbent polymer composition which have a "swelling value" (WO 93/ p. 13 line 15 to p.14 line 5; U. S. Col. 7, lines 19-44) defined by a formula (WO 93/ p.13, lines 9-14; U. S. Col. 7, lines 45-51). The swelling value consists of a number that indicates the relative water absorbency of the yarn or the yarn coated with the superabsorbent polymer composition.

The following analysis of the data in Geursen bears out the reference does not teach or suggest superabsorbent polymers that can absorb greater than about 100 times their weight in water for the process or product disclosed.

Table A, reports the swelling values of a polyester yarn coated with a superabsorbent water-in-oil emulsion. Prior to coating, the yarn had a swelling value of

9 (WO 93/ p. 17, line25; U. S. Col. 9, lines 34-35). The formula in WO 93/ p.13, lines 9-14; U. S. Col. 7, lines 45-51 gives the swelling value of the superabsorbent polymer:

$$\text{swelling value} = \frac{(a - b) \times 100}{b}$$

Arbitrarily setting the weight of the yarn (the value for "a") at 100 grams will give the dry weight of the yarn (the value for "b") as follows:

Example 1                      Swelling value of uncoated yarn = 9 (Col. 9, lines 34-35)

$$\frac{100-b}{b} = 0.09$$

$$100 = 1.096b$$

$$b = 91.74 \text{ (dry weight of yarn)}$$

$$\text{Yarn water absorption} = 100 - 91.74 = 8.26$$

Example 1                      Swelling value of coated yarn = 114 (Col. 9, line 28)

$$\frac{100-b}{b} = 1.14$$

$$100 = 2.146b$$

$$b = 46.72 \text{ (dry wt. of yarn and superabsorbent polymer)}$$

$$\text{Coated yarn water absorption} = 100 - 46.72 = 53.28$$

$$53.28 - 8.26 = 45.02 \text{ water absorbed by superabsorbent polymer}$$

$$46.27 \times 2.1\% \text{ polymer (Col 9, line 28)} = 0.97 \text{ superabsorbent polymer on yarn}$$

$$\frac{45.02}{0.97} = 46.3 \text{ Superabsorbent polymer absorbs 46.3 times its weight in water.}$$

This shows that 0.97 grams of superabsorbent polymer picked up or absorbed 45.02 grams of water or 46.3 times its weight in water, less than one-half of that of appellant's claimed superabsorbent polymer which absorbs greater than about 100 times its weight in water.

The reference also shows Example 3 uses the same yarn employed in Example 1 but with the application of 7.0 weight percent of the same superabsorbent polymer employed in Example 1. Also the swelling value of the sample increased from 114 in Example 1 to 171 in Example 3. Using the method above (pp. 6-7 of this brief), shows that the superabsorbent polymer of Example 3 had a water absorbency of about 20 (actually, 21.2, which sets the superabsorbent polymer concentration at about 80 weight %) as compared to the water absorbency of Example 1 of 45 ( i.e., a superabsorbent polymer concentration of 55 weight %).

The same calculations will show the superabsorbent polymer of experiment 4 (Table B) coated on a nylon-6,6 yarn absorbs about the same amount of water, i.e., less than about one half appellant's claimed superabsorbent polymer that absorbs greater than about 100 times its weight in water.

These data from Geursen clearly show the inventors did not know how to combine a lubricant with a superabsorbent polymer that absorbs greater than about 100 times its weight in water, or the desirability of doing this. Since the reference does not disclose this type of polymer coating or how to produce it, Geursen does not contain an enabling disclosure. Appellant, on the other hand, has disclosed methods on how to combine superabsorbent polymers that absorb greater than about 100 times their weight in water with lubricants and use the combination as a lubricant.

Geursen attempted to address the problem of coating a superabsorbent polymers on yarn in light of the primary difficulty the industry had with them, namely that when combined with water they caused extremely high viscosities at a relatively low concentration. The superabsorbent polymer formulation sought by Geursen, not only had to have some flowable characteristics in order to apply it as a coating material, but also had to have a relatively high solids content. Cf. Geursen, WO 93/ par. bridging pp. 4-5, U.S. column 2, lines 57-67.

Geursen addressed this problem by polymerizing the superabsorbent monomer to form an emulsion with the superabsorbent polymer in the water phase. Analyzing the nature of water-in-oil emulsions will illustrate further how Geursen achieved the goal of not only providing a superabsorbent polymer formulation having relatively high superabsorbent polymer solids, but also a flowable composition that could be coated onto a substrate with relative ease.

This water phase consists of very small droplets of superabsorbent polymer in combination with water (the discontinuous phase) suspended in the oil phase (the continuous phase). One can easily visualize that the viscosity of the droplets made up of water and a superabsorbent polymer would have little, if any, effect on the oil or continuous phase if the particles were sufficiently mobile in the continuous phase, e. g., by employing a sufficient volume of the continuous phase. By utilizing an emulsion, Geursen addressed the major problem caused by the high viscosity superabsorbent polymers, namely their tendency to impart high viscosity to the formulation. Geursen thereby obtained a formulation that flowed readily and fulfilled the need to employ superabsorbent polymers as an easily applied coating.

Geursen, however, had to address another problem, namely the superabsorbent polymer solids content in the dispersed phase or the droplets. If he employed a superabsorbent polymer that absorbed 1,000 times its weight in water the droplets would contain 1,000 parts by weight of water for every one part of superabsorbent polymer (0.1% superabsorbent polymer) and he would not resolve the problem of applying a sufficient amount of superabsorbent polymer onto a substrate so it could act as a water barrier. Similarly if he used a superabsorbent polymer that absorbed greater than about 100 times its weight in water, each droplet would contain about 100 parts by weight of water for one part of superabsorbent polymer (1% by weight of superabsorbent polymer). In both instances, the superabsorbent polymers would not provide a high solids coating.

Geursen appears to address this solids problem by using a superabsorbent polymer that absorbs only about 45 times its weight in water, and using the analysis above, each droplet of the emulsion would contain about 55 parts by weight of superabsorbent polymer and 45 parts by weight of water, a 55-fold increase in solids over a superabsorbent polymer that absorbs about 100 times its weight in water. Geursen employing a superabsorbent polymer that absorbed about 20 times its weight in water gave him a solids content of 80 parts of the polymer, amounting to an 80-fold increase over a superabsorbent polymer that absorbs about 100 times its weight in water.

Using superabsorbent polymers that only absorb about 45 or 20 times their weight in water allowed Geursen to achieve the dual objective of not only laying down relatively large amounts of superabsorbent polymer as a coating, but also avoiding the problem of removing large quantities of water from the substrate.



Geursen also appears to avoid this problem of high water absorbing superabsorbent polymers by using a sodium sulphonate electrolyte in the emulsion polymerization process. For example, Geursen, WO 93/ par. bridging pp.16-17; U. S. column 9, lines 8 et. seq. discloses using a sodium sulphonate ("sulpho") salt of the superabsorbent monomer.<sup>3</sup>

Levy (of record), however, discusses this well known technique of reducing both the viscosity and water absorbency of a superabsorbent polymer, observing:

normally, unmixed formulations of superabsorbent polymers and water have a tendency to form gels of such a high viscosity that they are not flowable. An additional technique used to render a viscous superabsorbent polymer composition . . . flowable, is the additional [sic, addition] of varying concentrations of one or more salt(s)/electrolyte(s) such as sodium chloride. . . . These salt(s)/electrolyte(s) have a tendency to interfere with the hydrogen bonding or reduce the hydrophilic bonding of the water to the gel. Also, superabsorbent polymers . . . absorb less water when electrolytes are present.

Levy, U.S. Patent No. 4,985,251 column 15, lines 12-26 (emphasis added).

Takeda et al. United States Patent No. 4,618,631 teaches the same phenomenon in table I at column 7, lines 41-55, Table II, column 8, lines 60-65, and Table III, column 10, lines 1-10. These data show that the addition of an electrolyte to a superabsorbent polymer reduces the water absorbency of the polymer by a factor of about ten. For example, the addition of an electrolyte to a superabsorbent polymer with a water absorbency of about 500 times its weight in water will reduce the absorbency of the polymer to about fifty times its weight in water. Garner et al. Journal of Chemical Education, January 1997, Vol. 74 No. 1, p. 95 describes this as well.

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<sup>3</sup> Geursen might also have employed sodium chloride as an electrolyte to achieve this result, which this brief discusses later.

This raises the question as to whether or not Geursen added sodium chloride or a similar salt to the superabsorbent polymer emulsion to reduce the water absorbency of the polymer. A further examination of the data reported in Table A of Geursen suggests this. The superabsorbent polymer of Example 1 of Geursen absorbed about 45 times its weight in water, whereas the superabsorbent polymer of Example 3 absorbed about 20 times its weight in water. Bearing in mind that Geursen employed the same superabsorbent polymer in both examples, the skilled artisan would know that something was done in the experiments to obtain that difference in water absorbency, but not reported. Appellant believes that Geursen added a salt such as sodium chloride to the emulsion of Example 3 to change the water absorbency of the superabsorbent polymer.

Another factor that influences the absorbency of these superabsorbent polymers is the degree of polymer cross-linking, but Geursen doesn't discuss this, even though known in the prior art, e.g., Garner et al. supra. Geursen by employing the same superabsorbent polymer in both examples 1 and 3 does not appear to have changed the cross-linking of the superabsorbent polymer. Geursen also discloses the addition of other components to the polymerization reaction, without indicating anything about the effect they may have on water absorbency of the polymer obtained. Geursen, WO 93/ par. bridging pp. 7-8, p. 8, lines 20-30; U.S. column 4, lines 28-33, lines 51-58.

Although Geursen might appear to disclose using superabsorbent polymers having water absorbencies greater than 100, (WO 93/ par. bridging pp.12-13; U.S. column 7, lines 1-6) he does not. A closer reading of the reference shows this disclosure relates to a "product" further described as a combination of the substrate with the superabsorbent polymer, and not the superabsorbent polymer alone. WO93/ lines

23-24; U.S. column 6, lines 57-60. As illustrated above, Geursen's substrates absorb water and have an affect on the overall water absorbtion of the combination. The water absorbtion of the "product" takes into account the combined effect of the substrate absorbing water and the polymer absorbing water. Geursen therefore does not teach the use of a superabsorbent polymer having a water absorbency greater than about 100, but rather the water absorbency of the "product" which is the substrate combined with the superabsorbent polymer.

Because Geursen teaches superabsorbent polymer coatings that absorb only about 45 or 20 times their weight in water, the reference clearly raises the question of how the skilled artisan gets over the hurdle of this water absorbency of 45 or 20 to arrive at appellant's lower limit of water absorbency greater than about 100, and why she or he would be led by the reference to do this? The reference clearly lacks an enabling disclosure of how to do it. The examiner therefore has not met the burden of providing evidence that Geursen does in fact show a superabsorbent polymer in an aqueous medium suitable for coating a substrate, where the superabsorbent polymer absorbs greater than about 100 times its weight in water. Lacking this evidence, the rejection cannot stand.

The Geursen Reference does not Anticipate Since It Does Not Contain an  
Enabling Disclosure of How to Make Appellant's Invention

In a recent decision, The Court of Appeals for the Federal Circuit re-emphasized "anticipation requires that the assertedly anticipating disclosure enabled the subject matter of the reference and thus the . . . [claimed] invention without undue experimentation." Elan Pharmaceuticals, et al. v. Mayo Foundation for Medical

Education and Research, 00-467, slip op. at 3 (Fed. Cir., October 2, 2003). The court amplified its position by citing its prior rulings on the issue, pointing out:

[T]o serve as an anticipating reference, the reference must enable that which it is asserted to anticipate. "A claimed invention cannot be anticipated by a prior art reference if the allegedly anticipatory disclosures cited as prior art are not enabled. . . . To anticipate the reference must also enable one of skill in the art to make and use the claimed invention. . . . To anticipate a claim, a reference must disclose every element of the challenged claim and enable one skilled in the art to make the anticipating subject matter."

Elan Pharmaceuticals, et al. 00-467, slip op. at 6 (citations omitted).

Geursen does not contain an enabling disclosure as pointed out above. He had to confront the problem of formulating a flowable superabsorbent composition that also had a reasonably high solids content in order to avoid the application of multiple coats on a fiber to obtain acceptable film thickness, i. e., he had to lay down a sufficient amount of superabsorbent polymer on the fiber to act as a water barrier, and any composition that required applying multiple coats because of a low solids content, reduced the efficiency and increased the costs of applying it.

He faced a see-saw dilemma: if he pushed up the water absorbency of the superabsorbent polymer, he would push down the quantity of polymer in the emulsion (i. e., the solids content), and if he pushed up the quantity of polymer, he would have to push down the water absorbency of the polymer. The Geursen examples indicate he struck some kind of balance between water absorbency and solids content by using superabsorbent polymers in the emulsion that only absorbed about 45 or about 20 times their weight in water.

Importantly, Geursen does not teach how to make compositions comprising appellant's lubricants in combination with water in oil emulsions of superabsorbent polymers that absorbed more than 100 times their weight in water. He utilizes a superabsorbent polymer water in oil emulsion obtained from an outside supplier, Stockhausen GmbH "MIROX W 45985," but doesn't provide instructions on how to manufacture it, and as demonstrated above, the polymer in this emulsion only absorbs about 45 or 20 times its weight in water. The examiner has pointed to nothing in the Geursen reference that enables the skilled artisan to make this emulsion.

The Elan Pharmaceuticals court set out criteria for enablement stating it:

requires that "the prior art reference must teach one of ordinary skill in the art to make or carry out the claimed invention without undue experimentation. . . .Whether undue experimentation would have been required to make and use than invention, and thus whether a disclosure is enabling under 35 U.S.C. §112, par.1 is a question of law." The disclosure in an assertedly anticipating reference must be adequate to enable possession of the desired subject matter. It is insufficient to name the desired subject matter, if it cannot be produced without undue experimentation

Elan Pharmaceuticals, et al. 00-467, slip op. at 7-8. (Citations omitted)(emphasis added.)

Lacking any instruction whatsoever on how to produce the Stockhausen GmbH "MIROX " water in oil emulsions, let alone how to obtain one with a superabsorbent polymer in the water phase that absorbs greater than 100 times its weight in water, Geursen lacks the requisite enabling disclosure to consider it as an anticipatory reference, especially since the examiner has not alluded to anything that shows the

skilled artisan would know how to make such a emulsion. The reference does not contain any teaching on how to balance Geruson's required flowability of the emulsion with the additional requirements of polymer water absorbency and high solids content. Juggling these three variables involves more than routine experimentation. Appellant submits that if in fact a skilled artisan could do this based on the information provided by the reference, and obtain a water in oil emulsion of a superabsorbent polymer that absorbed more than 100 times its weight in water with acceptable flowability and solids content, it would amount to requiring her or him to engage in undue experimentation.

The Geursen Reference does not Anticipate Claims 1, 57-58,63-64 and 69-70

Since It Does Not Disclose Every Element of the Challenged Claims

In order to anticipate, Geursen has to "disclose every element of the challenged claims." Elan Pharmaceuticals, et al. 00-467, slip op. at 6. Accordingly, Geursen does not anticipate claim 1 or 57 which relate to a superabsorbent polymer in combination with a "petroleum oil lubricant or grease thereof, a solid inorganic compound, a solid organic compound, water containing a lubricant additive, a phosphate, a fatty oil, fatty acid or wax, a synthetic oil lubricant, or grease thereof, or a soap."

The examiner has not pointed out where Geursen teaches a " petroleum oil lubricant or grease thereof, a solid inorganic compound, a solid organic compound, water containing a lubricant additive, a phosphate, a fatty oil, fatty acid or wax, a synthetic oil lubricant, or grease thereof, or a soap" set out in claim1 and 57.

Similarly, Geursen does not anticipate claims 58 which relates to a superabsorbent polymer in combination with a "petroleum oil lubricant or grease thereof." The examiner has not pointed out where Geursen teaches a "petroleum oil lubricant or grease thereof." Geursen also does not anticipate claim 63 which relates to

a superabsorbent polymer in combination with "water and a lubricant additive." The examiner has not pointed out where Geursen teaches "water and a lubricant additive."

Geursen does not anticipate claim 64 which relates to a superabsorbent polymer in combination with "oil or greases thereof and water." The examiner has not pointed out where Geursen teaches "oil or greases thereof and water." Furthermore, Geursen does not anticipate claim 69 which relates to a superabsorbent polymer in combination with a "fatty oil, fatty acid or wax." The examiner has not pointed out where Geursen teaches a "fatty oil, fatty acid or wax." Lastly, Geursen does not anticipate claim 70 which relates to a superabsorbent polymer in combination with a "synthetic oil lubricant or grease thereof." The examiner has not pointed out where Geursen teaches a "synthetic oil lubricant or grease thereof."

All of the foregoing claims further characterize the superabsorbent polymer as absorbing greater than about 100 times its weight in water. As pointed out above, Geursen does not teach a superabsorbent polymer that absorbs greater than 100 times its weight in water in the Geursen emulsion, and lacks an enabling disclosure of how to produce an emulsion of a superabsorbent polymer that has this property.

### **The Claims Do Not Stand or Fall Together**

Claims 1 and 57 comprises generic claims to a process for forming a lubricating composition, and a lubricating composition of matter which is a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, and generically sets out various lubricant materials. The balance of the claims directly or indirectly depend on claim 57, however define the superabsorbent polymer as based on acrylic acid, an acrylic ester, acrylonitrile,

acrylamide, copolymers thereof or mixtures thereof. In the unlikely event that the examiner would be able to shown any acrylic resin for this particular application, appellant has the option of rebutting the rejection with data showing why the specific polymers as well as the particular lubricants contained in the claims have new, different, or unexpected properties.

The examiner has withdrawn the rejection of claims 59-62, 65-68 and 71-72 and has objected to them as "depending on claims that are rejected under 103 (a) [sic]" (December 3, 2003 Office Action, p. 2)<sup>4</sup>, further evidencing that the claims do not stand or fall together.

Claim 60 dependent on claim 59 relates to solid lubricants subgenerically set out in claim 61 and appellant also would have the opportunity to show new, unexpected and unobvious results employing these lubricant materials .

The claims also stand in the relationship of subgeneric claims to species claims centered around the particular lubricant. Appellant in each instance has the right to submit evidence to show the species claims have properties that would not be foreshadowed by all of the species that fall into the subgeneric claims from which they depend. If required and shown, this would further support appellant's position that the claims do not stand or fall together.

### **The Provisional Double Patenting Rejection**

The examiner provisionally rejects claims 57-71 under the judicially created doctrine of obviousness-type double patenting in view of copending application Serial No. 09/357,957 filed July 23, 1999. Appellant points out that the present examiner has

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4 . The examiner withdrew "[t]he previous rejections under 35 U.S.C. 103. . . ." and appellant will assume that the examiner intended to cite 35 U.S.C. § 102 (b), the only statutory rejection remaining in the application. (Cf. December 3, 2003 Office Action, p. 2)



also issued a provisional double patenting rejection in copending application Serial No. 09/357,957, which has not issued as a patent. Appellant should not be required to file a terminal disclaimer in the present application since the Patent Office may not allow the copending application which forms the basis of the double patenting rejection. When a provisional double patenting rejection is the sole remaining rejection in an application otherwise in condition for allowance, the M.P.E.P. states that the examiner should withdraw the rejection in the application and permit it to issue as a patent. M.P.E.P. § 804(I.)(B) p. 800 -15 July 1998.

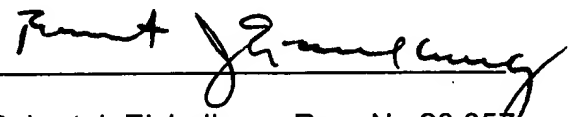
### **Conclusions**

Appellant requests the Board to reverse the examiner in all respects and remand the application to the examiner for the issuance of a Notice of Allowance. If the Board overrules the prior art rejections in this application and sustains the provisional double patenting rejection, appellant similarly requests the Board to remand the application to the examiner for issuance of a Notice of Allowance pursuant to M.P.E.P. § 804(I.)(B) p. 800 -15 July 1998.

Respectfully submitted,

THE LAW OFFICES OF ROBERT J. EICHELBURG

Dated: January 30, 2004

By:   
Robert J. Eichelburg, Reg. No 23,057

**CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8**

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By: Robert J. Eichelburg

Dated: January 30, 2004

Robert J. Eichelburg, Reg. No 23,057

(9) Appendix

Claims on Appeal

1. A process for manufacturing a lubricant composition consisting essentially of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces wherein said superabsorbent polymer absorbs more than about 100 times its weight in water, and said material for decreasing friction is a petroleum oil lubricant or grease thereof, a solid inorganic compound, a solid organic compound, water containing a lubricant additive, a phosphate, a fatty oil, fatty acid or wax, a synthetic oil lubricant, or grease thereof, or a soap, or mixtures thereof.

2 - 56. (cancelled without prejudice or disclaimer)

57. A lubricant composition of matter consisting essentially of a product produced by the process of combining a superabsorbent polymer that absorbs more than about 100 times its weight in water with a material for decreasing friction between moving surfaces, wherein said material for decreasing friction is a petroleum oil lubricant or grease thereof, a solid inorganic compound, a solid organic compound, water containing a lubricant additive, a phosphate, a fatty oil, fatty acid or wax, a synthetic oil lubricant, or grease thereof, or a soap, or mixtures thereof.

58. The lubricant composition of claim 57 consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a petroleum oil lubricant or grease thereof, and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

59. The lubricant composition of claim 57 consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a solid lubricant, wherein said solid lubricant is an inorganic compound, carbon or metal that provides barrier-layer lubrication, or mixtures thereof, and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

60. The lubricant composition of claim 59, wherein said solid lubricant is graphite, molybdenum disulfide, cobalt chloride, antimony oxide, niobium selenide, tungsten disulfide, mica, boron nitride, silver sulfate, cadmium chloride, cadmium iodide, borax, basic white lead, lead carbonate, lead iodide, asbestos, talc, zinc oxide, carbon, babbitt, bronze, brass, aluminum, gallium, indium, thallium, thorium, copper, silver, gold, mercury, lead, tin, indium, or the Group VIII noble metals or mixtures thereof.

61. The lubricant composition of claim 57 consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a solid organic lubricant, and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

62. The lubricant composition of claim 61, wherein said solid organic lubricant is a fluoroalkylene homopolymer or copolymer, a lower alkylene polyolefin homopolymer or co-polymer, a paraffinic hydrocarbon wax, phenanthrene, copper phthalocyanine, or mixtures thereof.

63. The lubricant composition of claim 57 consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is water containing a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

64. The lubricant composition of claim 57, consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is an oil or greases thereof and water, optionally containing a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

65. The lubricant composition of claim 57, consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a solid lubricant and water, optionally containing a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

66. The lubricant composition of claim 65, wherein said solid lubricant is graphite, molybdenum disulfide, cobalt chloride, antimony oxide, niobium selenide, tungsten disulfide, mica, boron nitride, silver sulfate, cadmium chloride, cadmium iodide, borax, basic white lead, lead carbonate, lead iodide, asbestos, talc, zinc oxide, carbon, babbitt, bronze, brass, aluminum, gallium, indium, thallium, thorium, copper, silver, gold, mercury, lead, tin, indium, the Group VIII noble metals, a fluoroalkylene homopolymer or copolymer, a lower alkylene polyolefin homopolymer or co-polymer, a paraffinic hydrocarbon wax, phenanthrene, copper phthalocyanine, or mixtures thereof.

67. The lubricant composition of claim 57 consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a phosphate, and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

68. The lubricant composition of claim 67, wherein said material for decreasing friction is zinc phosphate, iron phosphate or manganese phosphate, or mixtures thereof.

69. The lubricant composition of claim 57 consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a fatty oil, fatty acid, or wax, or mixtures thereof and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.



70. The lubricant composition of claim 57 consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a synthetic oil lubricant, or grease thereof, and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

71. The lubricant composition of claim 57 consisting essentially of a product produced by the process of combining a superabsorbent polymer with a material for decreasing friction between moving surfaces, wherein said superabsorbent polymer absorbs greater than about 100 times its weight in water and is a polymer of acrylic acid, an acrylic ester, acrylonitrile, acrylamide, co-polymers thereof or mixtures thereof, wherein said material for decreasing friction is a soap, and wherein said material for decreasing friction optionally contains a lubricant additive, wherein said lubricant additive is an antioxidant, rust inhibitor, antiwear compound, extreme pressure additive, detergent, dispersant, pour point depressant, viscosity-index improver, or foam inhibitor.

72. The composition of any one of claims 58-62, 67-71 where said composition is substantially anhydrous.

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 08/943,125

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	SUBCLASS 508	GROUP ART UNIT 1111
		EXAMINER medley

APPLICANTS RICHARD LEVY, MYERS, FL.

\*\*CONTINUING DATA\*\*\*\*\*  
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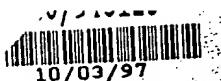
TITLE LUBRICANT COMPOSITIONS AND METHODS

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